

REMARKS

The remainder of this Amendment is set forth under appropriate subheadings for the convenience of the Examiner.

Amendments to the Claims

Independent Claims 14, 41 and 51 have been amended to recite "a first switching circuit that switches a common voltage applied to the counterelectrode between a first voltage and a second voltage," and to recite "a second switching circuit that switches between a normal video signal and an inverted video signal of the normal video signal." Independent Claims 14, 41 and 51 have been further amended to recite "a timing circuit a) controls switching of the first switching circuit and the second switching circuit, whereby the second switching circuit switches to the normal video signal when the first switching circuit switches the common voltage to the first voltage, and the second switching circuit switches to the inverted video signal when the first switching circuit switches the common voltage to the second voltage, and selectively controls voltage applied to the pixel electrodes, thereby scanning an image into the matrix display, and b) controls flashing of the light source to display the image." Support for these amendments can be found in the specification, for example, in FIGs. 12A, 12B, 12C and 12D and on page 21, line 23 through page 22, line and page 23, line 30 through page 24, line 6. Some typographical errors in independent Claims 14, 41 and 51 have been corrected.

No new matter has been added.

Claim Rejections under 35 U.S.C. §103(a)

Claims 14, 17, 25-28, 39-41, 43-47, 49-56 and 58, as previously presented, stand rejected under 35 U.S.C. §103(a) as unpatentable in view of U.S. Patent No. 5,867,795 to Novis, *et al.* (hereinafter "Novis") and U.S. Patent No. 5,337,068 to Stewart, *et al.* (hereinafter "Stewart"), and further in view of U.S. Patent No. 4,532,506 to Kitazima (hereinafter "Kitazima"). Claims 16 and 42, as previously presented, stand rejected under 35 U.S.C. §103(a) as unpatentable in view of Stewart and Kitazima, and further in view of U.S. Patent No. 5,786,665 to Ohtsuki, *et al.* (hereinafter "Ohtsuki"). Claims 29, 48 and 57, as previously presented, stand rejected under 35

U.S.C. §103(a) as unpatentable in view of Stewart and Kitazima, and further in view of U.S. Patent No. 5,206,749 to Zavracky, *et al.* (hereinafter "Zavracky").

Although Applicants do not agree with the Examiner for the reasons set forth made in prior responses, to expedite the prosecution of the application, independent Claims 14, 41 and 51 have been amended to more clearly define Applicants' invention. The subject matter of these independent claims, as currently amended, is not obvious in view of the cited references for the reasons set forth below.

A. Applicants' Claimed Invention of Independent Claims

As currently amended, independent Claims 14, 41 and 51 are directed to portable display systems comprising a matrix display that includes an array of pixel electrodes and a counter electrode, a light source that flashes to illuminate the matrix display, and a display control circuit. Specifically, independent Claim 51 recites an active matrix display as the matrix display. In these claims, the display control circuit includes ***a first switching circuit that switches a common voltage*** applied to the counterelectrode between a first voltage and a second voltage, the first voltage being higher than the second voltage, and ***a second switching circuit that switches between a normal video signal and an inverted video signal of the normal video signal***. The display control circuit also includes ***a timing circuit*** that controls the first switching circuit, the second switching circuit, whereby the first switching circuit switches the common voltage to ***the first voltage***, the second switching circuit switches to ***the normal video signal***, and when the first switching circuit switches the common voltage to ***the second voltage***, the second switching circuit switches to ***the inverted video signal***. The timing circuit also selectively controls voltage applied to the pixel electrodes.

As illustrated in FIG. 12A, 12B, 12C and 12D and on page 22, lines 7-34 and page 23, line 30 through page 24, line 6 of the specification, in operation of Applicants' claimed display systems, with the common voltage (V_{com}) set to a first voltage (V_{com} high), a signal for a normal image is scanned into the matrix display (1112). With the V_{com} set to a second voltage (V_{com} low), a signal for an inverted image is scanned into the matrix display (1112). Thus, in Applicants' invention, the V_{com} switches from V_{com} high to V_{com} low or vice versa by the timing circuit (1122), and at the same time, the video signal is switched from an actual normal video

signal to its inverted video signal or vice versa. As shown in FIGs. 12A and 12B, the timing circuit (1122) also controls flashing of the light source (1111), for example, to illuminate an image for viewing once the actual or inverted video signal is scanned into the matrix display (1112). Driving a matrix display this way has an advantage in that it saves driving power compared to that required without keeping the V_{com} and image data alternating.

B. Applicants' Claimed Invention are Non-Obvious in View of the Cited References

In support of the rejections, the Examiner combined Novis and Stewart and asserted in the Office Action mailed on August 10, 2005 that "the combination of Stewart and Novis discloses all the claimed limitations with the exception of the switching circuit." To remedy this deficiency, the Examiner further combined Stewart and Novis with Kitazima, stating that "Kitazima discloses an active matrix LCD (fig. 6) comprising a display control circuit which includes an inherent timing circuit ... and a switching circuit ... for switching a common voltage ... "

As discussed above, Applicants' invention employs a display control circuit that includes a timing circuit (1122), a first switching circuit (1133) that switches a V_{com} between a first voltage (V_{com} high) and a second voltage (V_{com} low), and *a second switching circuit* (1132) that switches between *a normal video signal* and *its inverted video signal*. In Applicants' invention, the V_{com} switches *from V_{com} high to V_{com} low or vice versa*, and at the same time, the image scanned into the matrix display is switched *from a normal video signal to its inverted video signal or vice versa* by the timing circuit (1122).

Although Kitazima discusses employing a counter electrode terminal voltage V_{CM} changed by V_b from V_c , Kitazima does not disclose or suggest a display control circuit that includes first and second switching circuits (1133 and 1132) and timing circuit (1122), as recited in currently-presented Claims 14, 41 and 51. In particular, there is *no* teaching in Kitazima of Applicants' switching circuit (1132) that switches between *a normal video signal* and *its inverted video signal*. Also, there is *no* teaching in Kitazima of Applicants' timing circuit (1122) that controls the first and second switching circuits whereby the V_{com} switches *from V_{com} high to V_{com} low or vice versa*, and at the same time, the image scanned into the matrix display is

switched *from actual normal image to its inverted image or vice versa* by the timing circuit (1122).

As with Kitazima, although Novis discusses data processing circuits (48) that includes logic and switching circuit arrays for controlling each LED in the LED array (47), the Novis's display circuit does not include Applicants' first switching circuit (1133) that switches V_{com} and Applicants' second switching circuit (1132) that switches between a normal video signal and its inverted video signal. Also, there is no teaching in Novis of Applicants' timing circuit (1122) that controls the first and second switching circuits, as specified in currently-presented Claims 14, 41 and 51.

Stewart discusses a timing circuitry (110), as illustrated in its FIGs. 1 and 2A, which controls a scanner for scanning images and a commutator for activating colored lamps. As with Kitazima and Novis, Stewart does not teach Applicants' claimed invention. In particular, Stewart does not teach Applicants' first switching circuit (1133) that switches V_{com} and Applicants' second switching circuit (1132) that switches between a normal video signal and its inverted video signal. Also, there is no teaching in Stewart of Applicants' timing circuit (1122) that controls the first and second switching circuits, as specified in currently-presented Claims 14, 41 and 51.

As for the secondary references, the Examiner cited Ohtsuki as teaching a LCD device with an LED device, and Zavracky as teaching a LCD display panel with an array of transistor circuits formed on a single crystal silicon and bonded to an optically transmissive substrate with an adhesive layer. However, none of these references teaches Applicants' first and second switching circuits, and Applicants' timing circuit that controls the switching circuits and a light source. Thus, none of these secondary references does not teach Applicants' claimed invention taken either separately or in any combination.

C. Summation

As discussed above, Novis, Stewart and Kitazima, separately or in combination, do not teach Applicant's claimed invention of independent Claims 14, 41 and 51. Further, none of the secondary references, Ohtsuki or Zavracky, remedies the deficiencies of Novis, Stewart and Kitazima. Therefore, the subject matter of independent Claims 14, 41 and 51 is non-obvious in

view of the cited references, taken either separately or in combination. The other dependent claims depend from independent from Claims 14, 41 and 51 directly or indirectly, and these claims are thus also non-obvious in view of the cited references, taken either separately or in combination, at least for the reasons stated above. Accordingly, Applicants respectfully request that the Examiner reconsider and withdraw the rejections.

Obviousness-Type Double Patenting Rejection

Claims 14, 16, 17, 25-29 and 39-58, as previously presented, have been rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claims 1, 4-7, 20-22 and 29 of U.S. Patent No. 6,476,784 B2.

Applicants will consider filing of a Terminal Disclaimer to overcome the obviousness-type double patenting rejections as appropriate upon notice of otherwise allowable subject matter in the present application.

Information Disclosure Statement

A Supplemental Information Disclosure Statement (SIDS) is being filed concurrently herewith. Entry of the SIDS is respectfully requested.

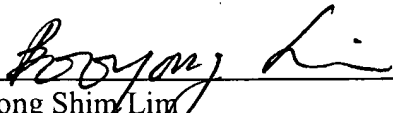
SUMMARY AND CONCLUSIONS

As discussed above, the subject matter of currently-presented claims is not obvious in view of Novis, Stewart, Kitazima, Ohtsuki and Zavracky, taken either separately or in combination. Therefore, in view of the above amendments and remarks, it is believed that all

pending claims are in condition for allowance, and it is respectfully requested that the application be passed to issue. If the Examiner feels that a telephone conference would expedite prosecution of this case, the Examiner is invited to call the undersigned.

Respectfully submitted,

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